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26.4.2018
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SC DEADLINE FOR DRAFT SCHEME MAY 3

On Cauvery, Centre gets tips from Bhakra Beas Board

SOWMIYA ASHOK
NEW DELHI, APRIL 25

WITH A week to go for the deadline set by Supreme Court for the Centre to submit a draft scheme on the Cauvery river water, the Ministry of Water Resources is consulting with officials of Bhakra Beas Management Board (BBMB), a frontrunner model for the scheme.

It is learnt that Union Water Resources Secretary UP Singh met BBMB officials, including the Board's chairman, on at least two occasions since the Supreme Court hearing on April 9, which set the May 3 deadline for the Centre.

"We have also been consulting legal and water experts to help us formulate the scheme," a senior ministry official told *The Indian Express*.

An official at BBMB, who did not wish to be named, said that the Board has given the ministry feedback on how to improve functioning of the existing model on which BBMB is based. "The main point is that whatever shape the scheme takes, it has to be fully empowered like the BBMB, which is in complete charge of operations and maintenance," the official said.

The BBMB team is learnt to have also told ministry officials that it should be a panel of technical experts rather than administrators, and it should be as streamlined as possible. "It costs to run such a board, and it is better to restrict the number of people to those who are knowledgeable, have experience, and are competent. They should then be paid adequately for doing the job right," the official told *The Indian Express*.

The BBMB was constituted under the Punjab Reorganisation Act, 1966, and is tasked with administration, operation and maintenance of Bhakra-Nangal Project, Beas Project and regulation of wa-

ter supply from Sutlej, Ravi and Beas and supply of power generation from these projects.

The Board has a chairman and two full-time members - one from Punjab for power and another from Haryana for irrigation. It also has two nominated members from the Centre and irrigation secretaries of Punjab, Haryana, Himachal Pradesh and Rajasthan.

A Water Resources Ministry official told *The Indian Express* that the ministry is still in the process of finalising the scheme given the divergent views of the Cauvery riparian states. It is the nature of this scheme that has been under contention ever since the February 16 order of the Supreme Court re-apportioning Cauvery water.

Citing Assembly elections in Karnataka, the Centre on March 30 had asked the Supreme Court to extend the deadline for implementation of the judgment by three months. The Central government told the court that there are fears that any announcement on Cauvery may "vitate the election process and cause serious law and order problems".

In its application, the Centre had stated that there were differences between some of the parties on the subject and asked the court to clarify whether it was open to the Centre framing the scheme at variance with the recommendations of the Cauvery Water Disputes Tribunal (CWDT) regarding the Cauvery Management Board (CMB).

The plea pointed out that the CMB, as recommended by the CWDT, was purely a technical body, and wanted to know if the Centre could modify its composition and include administrative and technical experts "for effective conduct of the business of the Board and considering overall sensitivity of the issues involved".

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Temp up to 41.6°C, rain relief by Friday

HT Correspondent

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NEW DELHI: The mercury level touched 41.6 degrees Celsius in Delhi on Wednesday afternoon, making it the hottest day of the season so far.

At Palam the day temperature was 43.1 degrees Celsius. Officials of the regional weather forecasting centre in New Delhi have stated that there won't be any major change in the mercury levels on Thursday with the maximum temperature likely to touch 42 degrees Celsius. The officials, however, have not declared a heat wave alert yet.

On Friday, officials said, a thunderstorm and some rain could hit the city, bringing down the temperature by at least five degrees.

"Strong northwesterly winds over the past few days have helped to keep the day temperature from rising drastically. But now that these winds have lost speed, the maximum temperature has shot up. On Wednesday the day temperature shot up to 41.6 degree, which was three degrees above normal," said Kuldeep Srivastava, senior scientist

with the regional weather forecasting centre.

A heat wave is declared when the maximum temperature crosses the 40 degrees Celsius mark in at least three adjoining weather monitoring stations and the temperature is at least five degrees above the normal.

The last time the day temperature had touched the 40 degrees Celsius mark was on April 16. On that day, the Safdarjung observatory, which is considered a representative of the city's weather, had recorded a maximum temperature of 40 degrees Celsius, while the maximum temperature at Palam was recorded at 41.6 degrees Celsius.

Officials, however, said that a western disturbance is approaching and under its influence a cyclonic circulation is expected to develop over western Uttar Pradesh and Haryana.

"Together, these two weather systems (western disturbance and cyclonic circulation) would trigger some rain on Friday. Even though there could be a dust storm and thunderstorm on Thursday night, rainfall is expected the following day," said Srivastava.

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Good rain forecast gets govt to raise its grain output target

TIMES NEWS NETWORK

New Delhi: Backed by the forecast of a normal monsoon, the Centre on Wednesday set a tentative foodgrain production target of 283.7 million tonnes (MT) for the 2018-19 crop year (July-June) — nearly 6 million tonnes more than what it had estimated for the current crop year (2017-18) which was an all-time record.

The new target was released by the agriculture ministry on the inaugural day of its Kharif campaign conference which is being organised to sensitise states on how to prepare itself to reap maximum benefits of normal rainfall during the June-September period and also on how to harvest rainwater for use during winter.

Admitting that farmers do not get fair value of their produce, agriculture minister Radha Mohan Singh noted that higher production would be a matter of great satisfaction but the government now looked at a paradigm shift in its policy to

make it "income-oriented rather than production-oriented".

Seeking states' support on implementing various central schemes which are meant for increasing farmers' income, the minister said, "Need of the hour is full cooperation of state governments so that all efforts of the central government reach the farmers."

The tentative target of foodgrain production at 283.7 MT for 2018-19 includes 113 MT of rice, 100 MT of wheat and 24 MT of pulses and 46.7 MT of coarse cereals among others. Besides, the ministry also set a production target for oilseeds at 36 MT and of sugarcane at 355 MT — both higher than the estimated production of 2017-18.

Higher production of pulses and oilseeds assumes significance as India has to spend substantial amount every year on import of these commodities to meet demand. It'll also help the government check prices of these commodities ahead of the 2019 parliamentary elections.

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Hottest day so far at 41.6°C, rain likely tomorrow

TIMES NEWS NETWORK

New Delhi: It was Delhi's hottest day of the season so far, as mercury levels crossed 43 degrees Celsius for the first time this season at Palam. Safdarjung - considered as the base for Delhi's weather - also recorded its highest maximum temperature of the season so far, at 41.6 degrees Celsius.

Met officials say the capital is likely to witness similar temperatures on Thursday as well with the chance of a strong dust storm, however, Friday will bring respite in the form of light rain.

"We forecast high temperatures for April 25 and 26, that has been on track so far. Delhi will get some relief once again on Friday, with light rain likely to take

place," said Kuldeep Srivastava, scientist at the regional met office. "Thursday, meanwhile, may even eclipse the maximum reported on Wednesday."

"Thursday forecast shows there is a chance of a dust storm later in the day, with the maximum and mi-

IT'S HOTTING UP

nimum expected to be around 42 and 23 degrees Celsius respectively. The rain on Friday will bring down the maximum to 38 degrees Celsius," Srivastava added.

According to met officials, Palam was the hottest across the capital on Wednesday with a maximum of 43.1 degrees Celsius, however other locations recorded similar season highs.

The Ridge station recorded a maximum of 42.6 degrees Celsius, while Ayanagar had a high of 42.4 degrees Celsius, officials said.

The capital's hottest day of the season prior to this day was recorded on April 16 when the maximum touched 40 degrees Celsius at Safdarjung, while Palam was 41.6 degrees Celsius.

The India Meteorological Department (IMD), in its annual summer forecast recently, had said that while temperatures in the months of April, May, June and July are expected to be above normal for the season, it is not likely to be as hot as last year. The capital had recorded a maximum of 43.2 degrees Celsius last year in April at Safdarjung.

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अप्रैल में जून जैसी गर्मी पड़ रही

नई दिल्ली | कार्यालय संवाददाता

राजधानी में अप्रैल के माह में ही जून जैसी गर्मी पड़ने लगी है। गर्मी के कारण लोगों को काफी परेशानियों का सामना करना पड़ा। मौसम विभाग के अनुसार दिल्ली में बुधवार को अधिकतम तापमान 41.6 डिग्री सेल्सियस पहुंच गया। यह सामान्य से तीन डिग्री सेल्सियस अधिक है। वहीं न्यूनतम तापमान 20.8 डिग्री सेल्सियस रहा। यह सामान्य से दो डिग्री सेल्सियस कम है। पालम इलाके में अधिकतम तापमान 43.1 डिग्री पहुंच गया।

बुधवार इस साल का सबसे गर्म दिन रहा। दिल्ली के ज्यादातर इलाकों में अधिकतम तापमान 42 डिग्री के करीब रहा। पिछले सात सालों में 25 अप्रैल को इतनी अधिक गर्मी कभी दर्ज नहीं की गई। दिल्ली में मई अंत या जून महीने में औसत अधिकतम तापमान 41 डिग्री के करीब दर्ज किया जाता है। मौसम विभाग के अनुसार गुरुवार को भी आसमान में बादल रहेंगे। दोपहर के बाद कई इलाकों में धूल भरी आंधी व हल्की बूदाबांदी दर्ज की जा सकती है। इस दौरान अधिकतम तापमान 42 डिग्री सेल्सियस व न्यूनतम तापमान 23 डिग्री सेल्सियस के करीब रहेगा।

मौसम वैज्ञानिक कुलदीप श्रीवास्तव ने बताया कि बुधवार को दिल्ली के ज्यादातर इलाकों में पारा 42 डिग्री के करीब रहा। गुरुवार को भी राजधानी में पारा 42 डिग्री के करीब रह सकता है। वहीं एक पश्चिमी विक्षोभ के प्रभाव व पश्चिमी उत्तर प्रदेश व हरियाणा की सीमा पर कम दबाव का क्षेत्र बनने से शुक्रवार को दिल्ली व आसपास के इलाकों में बारिश की संभावना है। मौसम में इस बदलाव से तापमान में भी कमी दर्ज की जाएगी।



नई दिल्ली में बुधवार को गर्मी ने लोगों को काफी परेशान किया। गर्मी से राहत पाने के लिए यमुना किनारे नहाता एक बच्चा।
● विपिन कुमार

पिछले कुछ वर्षों में 25 अप्रैल को तापमान

वर्ष	अधिकतम	न्यूनतम
2018	41.6	20.8
2017	38	24
2016	37	20
2015	39	22
2014	37	21
2013	39	23
2012	38	21
2011	39	23

गर्म हवाओं ने मांग बढ़ाई कंपनियों ने कटौती

गर्म हवाओं की वजह से दिल्ली में बिजली की मांग में इजाफा शुरू हो गया है। बुधवार को दिल्ली की बिजली मांग में 226 मेगावॉट का इजाफा दर्ज किया गया है। मांग को पूरा करने में नाकाम रही बिजली कंपनियों ने कई इलाकों में दो से तीन घंटे कटौती की।

पालम में सबसे ज्यादा रहा अधिकतम तापमान

स्थान	अधिकतम तापमान
सफदरजंग	41.6
पालम	43.1
लोधी रोड	41.2
रिज	42.6
आसानगर	42.4
डीए	42.2
जाफरपुर	41.8

अधिकतम न्यूनतम

(सभी आंकड़े मौसम विभाग के अनुसार हैं। तापमान डिग्री सेल्सियस में हैं।)

Hindustan Times
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आज भी सताएगी तेज गर्मी

■ **प्रस, नई दिल्ली:** अप्रैल में ही गर्मी में कुछ बदलाव देखने को मिलेंगे। पिछले साल 21 अप्रैल को तापमान 43.2 डिग्री का सबसे गर्म दिन बुधवार रहा। लू के थपेड़ों के बीच दोपहर को लोग बाहर रहने की हिम्मत नहीं जुटा पा रहे थे। सफदरजंग का तापमान 41.6 और पालम 43.1 डिग्री को छू गया। गुरुवार को भी राहत के आसार नहीं हैं। तापमान 42 डिग्री रहेगा। दोपहर बाद आंधी आने से मौसम में कुछ बदलाव देखने को मिलेंगे। पिछले साल 21 अप्रैल को तापमान 43.2 डिग्री दर्ज किया गया था। बुधवार सुबह 9 बजे से ही हवाएं गर्म हो गईं। 12 बजे के बाद लू के थपेड़ों ने बाहर रहना मुश्किल कर दिया। आरडब्ल्यूएफसी (रीजनल वेदर फोरकास्टिंग सेंटर) के साइंटिस्ट डॉ. कुलदीप श्रीवास्तव के अनुसार गुरुवार को भी तापमान 42 रहेगा। शाम के समय आंधी आएगी। 27 अप्रैल को दोपहर के आसपास हल्की बूंदाबांदी के बाद तापमान कुछ कम हो सकता है। उन्होंने बताया कि गाजियाबाद, नोएडा, ग्रेटर नोएडा में दिल्ली से अधिक बारिश होगी, हालांकि यह भी बहुत अधिक नहीं होगी। इस बदलाव की वजह से अगले दो दिन तक तापमान मामूली रूप से कम होगा। 29 अप्रैल से इसमें फिर बढ़ोतरी होगी और यह 39 डिग्री से 40 डिग्री तक पहुंच जाएगा।

Dying Narmada will rob fish

THREAT Fishermen fear the Bhadbuth Weir-cum-Causeway will rob them of their livelihood. It will cut off a unique ecosystem and after that, Narmada's hilsa is expected to die out in three years

Gayatri Jayaraman

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The approach towards dam-building on rivers is to save every drop of sweet water from "running waste" into the sea. That dammed water is then redirected to those the government decides need it the most. These are typically urban centres, industrial zones, and farmers. But those who love the river say the one who needs the water first is the Narmada herself. It is an ideological chasm between those who live off the river, and those who would harness it.

What happens when there is no water left for the river? It begins to die. That death begins with the death of the organisms that live in it, and spreads to the death of organisms that live off it.

At the office of the Narmada Grievance Redressal Authority, Medha Patkar is pleading the case of Hazariabhai, a Bhilali adivasi from Barwani district. A community that survives on fishing, it has been allocated compensatory land 100km away from the river. The story repeats itself along the route of the river as fishermen seek access to former breeding grounds that are now submerged and restricted. As mangroves vanish, flow turns to dead water, and the river runs dry. While the GDP of India from agriculture always includes fisheries — it contributes 1.1% of the GDP, 5.15% of the agricultural GDP; India ranks second globally in fisheries, and the sector engages 14 million people with an output of 10.07 metric tonnes — the protests of fishermen are almost always suppressed.

In Bharuch, Kamlesh Madhivala, 38, Praveen Madhivala, 43, Heral Dheemar, 38 and Praveen Machi, 31 — members of the Samast Bharuch Machimar Samiti and under the banner of the Narmada Bachao Andolan — led a 4,000-member march to the district collector's office on April 17. They protested on behalf of 35,000 fishermen who would be affected. It was not their first protest against the construction of the Bhadbuth Weir-cum-Causeway at Kalpasar. The fishermen waved black flags at the Prime Minister Narendra Modi on his visit last year.

The tendering process is on and construction is expected to begin in six months, raising the barrage at Ambetha near Dahej, 5.15km downstream. The project received Coastal Regulation Zone (CRZ) clearance in August 2017. The protestors say they were not consulted or informed, and were only able to file objections in November 2017, a month after the objection period lapsed. The NGT accepted the application nevertheless — after all, livelihoods were at stake. The barrage will "save" the flow of sweet water out of the Gulf of Khambat, form a final wall between river and sea, and divert water to the Kalpasar reservoir, envisaged as a sweet water lake, to also

draw tourism.

Except, the fishermen fear, nothing about it will be sweet. Already, they say, their hilsa fishing boats lie on sewage coming from the towns downstream, carried in with sea water as it encroaches on the absent river's territory. Once dammed, nothing will move the filthy water out from the stilled river. It will accumulate sewage and industrial effluents, they predict. At the river bank, the Narmada barely exists.

Without consistent flow from the Sardar Sarovar dam throughout the year, the ingress of the sea is unstoppable, says Mahesh Pandya, environmentalist and director of NGO Paryavaran Mitra. The banks on both sides of the river have already turned saline, salt surfaces on the baking river bed. Nothing will grow here soon enough — another Kutch in the making. Protection walls line the west bank, as the river has begun to veer left. But they've been futile.

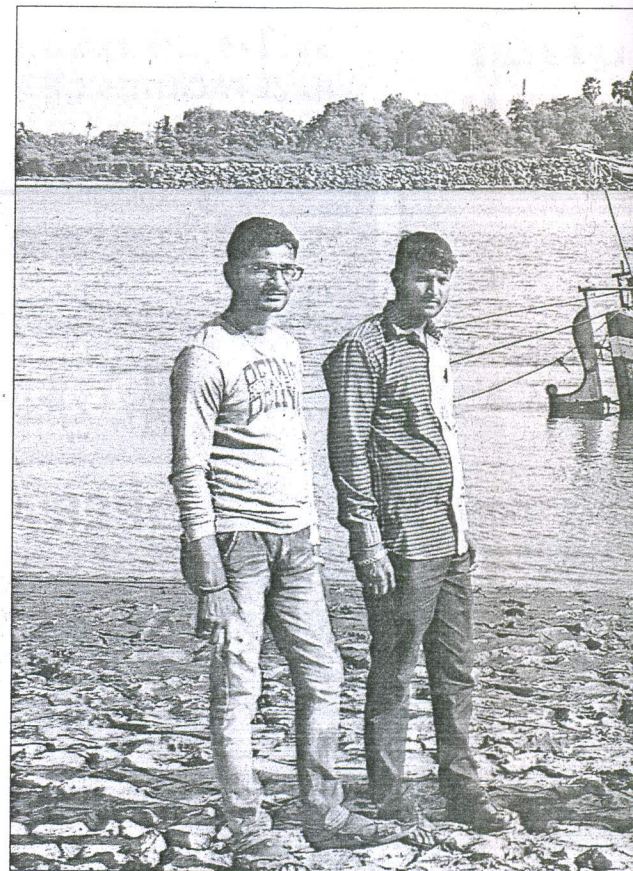
When she flowed, the Narmada dug the soil out from behind the protection wall and went on her way.

Most importantly for the fishermen, they fear their livelihood will be over. The Narmada's hilsa is expected to die out in three years. The Narmada's most famous catch, the hilsa is female. The *Nar Hilsa*, or male hilsa, spawns in other estuaries, but the female tends to return to the mouth of the Narmada. The fish uniquely spawns in the brackish waters caused by the back and forth of the sangam — the mixing of river and sea during June, July and August. During the other nine months, the fishermen survive on other fish. But what they make in those three months is much larger than what they make off the rest of the year put together and is what allows them to perform marriages, build homes, and replace nets and boats.

The weir will cut off this unique ecosystem. Officials from the Kalpasar project last year explained how they planned to build a fish lock for the hilsa to climb. The fishermen say they wanted to laugh in their faces. The hilsa, unlike the Atlantic salmon, for whom the lock systems work, cannot climb or fly. Once the female hilsa dies out, it is only a matter of time for the male.

Of the remaining river species, 80% have already disappeared. Varieties they used to fish don't exist anymore: the Masheer, the unique Narmada prawn, disappeared in 2003. Local varieties called magyan, diggar, modda, gojira, and jeeptha too are also not to be found. Now, they get crocker fish and gotya instead. As of 2014, Praveen Dheemar used to carry off five tempos full of hilsa, he says. The fish would reach Kolkata the next day by train, where it would retail for ₹800-1200 a kilogram. Now, he barely fills a tempo.

The fishermen also helpfully pointed out a flaw in the design of the dam to its technical team. "Every year, the sea deposits silt in the river. All it takes is one



■ Members of the Samast Bharuch Machimar Samiti are a worried lot

monsoon day, and the river in full spate tosses the silt back to the river. This has been the natural pattern of the river for centuries," says Kamlesh Madhivala. With the dam and restriction of water flow in dry summers, this exchange no longer persists. So silt builds up. The fishermen say the salinity of the river was 4.5 EC (electrical conductivity) six months ago — that equals 16 feet of silt deposits. With repeated ingress of sea water, this increases. The weir's height is designed at 86 feet. With Bharuch lying 36 feet upstream, and salinity expected to be 6.5 EC — an additional 20 feet of silt — the usefulness of the dam is reduced by half.

VP Kapadia, chief engineer of the Kalpasar project, says the fishermen's fears are natural, but believes the project will actually save them. He said the government does not have official salinity figures but will release some in the first week of May, after taking samples only after the full moon, so as to measure it at

its worst and doing an EC test with chloride test. "There is no water in the river but once the weir is built, it will retain what water is there. The weir is designed to include a small channel will allow fresh water to mingle with the river water to simulate breeding grounds now when there is no water, it is worse," he says. The size of the weir and the amount of water it will release is a dynamic consideration. A study by Utpal Bhaumik et al. for the Central Inland Fisheries Research Institute (CIFRI) showed that the river's temperature changes along the river where it was dammed were once naturally 15.0-30.5 Celsius, the central and lower plains held at 19 to 25 degrees. These fluctuated by 7-9 degrees during the season. Post dam, the river got divided into some stagnant and some that flowed. "This created different environments," Bhattacharya said. It made the temperature change, and the process began to kill off microphyllae, floating and aquatic fauna. In the middle and lower zones

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will rob fishermen of living



Members of the Samast Bharuch Machimar Samiti are a worried lot these days. The fishermen waved black flags at PM Narendra Modi on his visit last year.

GAYATRI JAYARAMAN / HT

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its worst and doing an EC test as well as a
chloride test. "There is no water now in
the river but once the weir is built, it will
retain what water is there. The impres-
sion that hilsa and other migratory fish
will lose breeding grounds is false, as the
weir is designed to include a fish path.
This small channel will allow the inter-
mingling of fresh water with the sea water
to simulate breeding grounds. In fact,
now when there is no water, the situation
is worse," he says. The size of the channel
and the amount of water it will release is
a dynamic consideration. As for the silt,
Kapadia says there will be no change to
the dam's height, which will cause other
engineering issues such as more submer-
gence of villages, but will require them to
undertake a desilting of the riverbed.

The indigenous knowledge of those
who know the river first-hand is slowly
being backed by research. A January 2017
study by Utpal Bhaumik et al, researchers
of the Central Inland Fisheries Institute
(CIFRI) showed that temperature
changes along the river when it was not
dammed were once naturally variegated.
In its upper ranges, it was milder
(15.0-30.5 Celsius), the central highlands
and lower plains held at 19 to 33 degrees.
These fluctuated by 7-9 degrees depend-
ing on the season. Post damming, the
river got divided into some stagnant parts
and some that flowed. "This creates two
different environments," Bhaumik says.
It made the temperature change erratic.
The process began to kill off plankton,
microphytae, floating and aquatic fauna.
In the middle and lower zones, the level of

dissolved oxygen fluctuated. The ambi-
ent chloride values increased in the lower
Narmada because of less freshwater dis-
charge and incoming tidal salinity.
Experts say the dying of fish species has
been two decades in the making.

In 1996, K Sankaran Unni of CIFRI had
found 174 species of river plankton and
111 kinds of zoo plankton covering nearly
550km of the river between Amarkantak
and Sethanighat. By 2009, SN Singh, also
from CIFRI Barrackpore, was reporting
only 72 macrobenthic organisms in the
estuary. The diversity and density of
organisms are indicative of environmen-
tal conditions. "The Narmada river, with
existing, ongoing, and proposed river val-
ley projects, faces the pressure of severe
shortages of river flow and a resultant
acute shrinkage of habitat areas for the
benthic organisms. The riverbed with
mostly gravel, pebbles, and boulders has
been gradually replaced by a coarse sand
bed, which does not support the growth of
macrobenthic fauna," Bhaumik notes.
In the building of the Indira Sagar dam, the
nesting habitats of the shastradhara tur-
tle, alongside that of crocodiles and moni-
tor lizards, were submerged. The destruc-
tion of river turtle habitats greatly upset
the ecological balance.

In 1941, Hora and Nair (authors of
Fishes of the Satpura Range, Central Pro-
vinces, Records in Indian Museum, Cal-
cutta), recorded 40 species of fish from the
Satpura range alone. In 1967, Karam-
chandani et al (CIFRI) recorded 77 species
in just the upper and middle zones. In
1990, Doria found 76 species within the

river in Madhya Pradesh. In 1991, Rao et
al (Inland Fisheries Society) studied the
whole river and found only 84 species.
Arjun Shulka and Sunita Sharma (Model
Science College, Jabalpur) in 2017 found
25 species in the post monsoon season.

Annual fish production in the Nar-
mada was estimated at 269.8 metric ton-
nes (Dubey, 1984) between 1958-1959 and
1965-1966, i.e. prior to the development of
dams. Figures through the years and
recent figures for fisheries from the Nar-
mada alone are not available.

The fish-loving Bengalis are having
the worst of it. In the estuary, the carp,
mainly the *Mahseer*, *rohu*, *kuhi* or *gunia*,
declined as have *gegra* and *reta*. Large
catfish have been replaced by medium
and small species. After the construction
of the Sardar Sarovar dam, giant freshwa-
ter prawns, unique to the river, declined.
The brood stock of Hilsa moved to only
breed within 100km of the Gulf of Cam-
bay. "Annual catch of 16,000 tons of the
species (hilsa) during 1990-1991 reduced
to 4,000 tons in 2007-2008 and indicated a
75% decline in production over a period of
one-and-a-half decades" Bhaumik notes.

The river bank of the Narmada has
now receded 3km away from the once-
bustling Bharuch bunder. Locals in the
old fishing villages recall having to move
to higher ground for the roaring monsoon
floods, collecting driftwood that would
last them as firewood stocks for the whole
year. "If they dam her up like this she will
cease to flow. If she dies, our livelihood
may go. No one will miss her more than
us," says Hiralbhai Dheemar.